REMARKS:

I. Status of the Claims

Claims 57, 58, and 62-70 are pending, and claims 1-56 and 59-61 are canceled. By this amendment claim 67 is amended to change the spelling of "propionate" to "propanoate". Both terms refer to the anion having formula "$CH_3CH_2COO^-$."

II. 35 U.S.C. § 103 Rejections

Reconsideration is respectfully requested of the rejections of claims 57, 58, and 62-70 under 35 U.S.C. § 103(a) in view of Rogier et al. (US 2003/0232844).

Claim 57 is directed to a method for using an ionic liquid in a variety of applications in which the cation of the ionic liquid is a tertiary ammonium ion comprising an hydroxyl substituted alkyl group (e.g., the ionic liquid is N,N-dimethylethanolammonium formate). Claim 58 is directed to a method for carrying out an enzyme-catalyzed reaction in which the solvent is an ionic liquid as defined above.

Rogier et al. disclose a class of compounds useful in treating cyclooxygenase-2 (COX-2) mediated disorders (examples of which are listed on pages 2 and 3). Formula I (page 2) is the general formula of the class of compounds useful in treating COX-2 mediated disorders, Formula II to IV (pages 6 and 7) are subclasses of Formula I which are of particular interest.

Rogier et al. also disclose pharmaceutically acceptable salts of compounds of Formula I to IV. These can be acid addition salts or base addition salts of compounds of Formula I to IV. It is stated that *'All of these salts may be prepared by conventional means from the corresponding compound of the invention by reacting, for example, the appropriate acid or base with the compound of Formula I-IV'* (paragraph [0627]). Numerous examples of appropriate acids or bases to react with compounds of Formula I to IV are listed (e.g., a compound of Formula I-IV can be reacted with one of the listed acids or a compound of Formula I-IV can be reacted with one of the listed bases), but there is no suggestion to react any of the listed acids with any of the listed bases. The Office states that "it would have been obvious in view of the teachings of Rogier because it teaches both the cation and anion from a limited number of choices" (page 3 of 7/20/11 Office communication). The overall teaching of Rogier et al., however, is that

the new compounds of Formula I-IV are useful in treating COX-2 mediated disorders. Despite this, the Office suggests that a skilled person would simply ignore the teachings of Rogier et al. and react one of the acids with one of the bases listed in paragraph [0627] because of the "limited number of choices." The resultant salt (e.g., dimethylethanolamine formate), however, would not be useful in treating COX-2 mediated disorders (which is the focus of Rogier et al.).

More importantly, Rogier et al. fail to disclose or suggest using a salt such as dimethylethanolamine formate as a solvent in an enzyme-catalyzed reaction (or any of the other applications recited in claim 57). The Office states that Rogier et al. teach "application of an enzyme such as a protease on a substrate [0030]. It is well known that the protease enzyme catalyzes a reaction with protein" (page 3 of Office communication). Rogier et al., however, do not disclose or suggest reacting a protease with a protein or performing any other enzyme catalyzed reaction in which a *salt such as dimethylethanolamine formate is used as the solvent or reaction medium*. In paragraphs [0704]-[0706], Rogier et al. describe measuring the effects of compounds of Formula I to IV (i.e., compounds synthesized in Examples 1-11) on COX activity. Cox activity was measured in the presence of a buffer (i.e., potassium phosphate buffer). Nowhere do Rogier et al. disclose or suggest using a salt such as dimethylethanolamine formate as the solvent or reaction medium in an enzyme assay.

Moreover, conventional wisdom teaches that enzyme activity is measured in the presence of a buffer (e.g., phosphate buffer, Tris buffer, etc.) such that the enzyme is maintained under "physiological conditions." A person of ordinary skill simply would not consider using a salt (or ionic liquid) as the reaction medium for an enzyme catalyzed reaction. For example, the ions of the salt (or ionic liquid) could interfere with weak ionic bonds of the enzyme and affect its activity, the pH of the salt (or ionic liquid) could be suboptimal for the enzyme, and so forth. Despite this well accepted teaching, the Applicant discovered that ionic liquids, as defined in claim 57, can be substituted for conventional buffers in enzyme catalyzed reactions (as demonstrated in paragraph [0672] of the published application).

In summary, the Applicant respectfully submits that Rogier et al. fail to disclose or suggest using a liquid salt such as N,N-dimethylethanolammonium formate as the

solvent or reaction medium in an enzyme-catalyzed reaction, as required in claims 57 and 58. Thus, not all of the required claim elements are disclosed or suggested by the prior art. Moreover, neither the disclosure of Rogier et al. nor knowledge generally available to those skilled in the art provides any rationale to modify the disclosure of Rogier et al. and arrive at the method of claims 57 and 58 with a reasonable expectation of success. Simply put, there is no teaching in Rogier et al. or general knowledge to use an ionic liquid as a solvent in an enzyme catalyzed reaction or in any of the other applications recited in claim 58.

Because the reference relied on by the Office does not disclose or suggest the presently claimed method, the Office appears to be applying "hindsight reconstruction" by using the teaching of the Applicant's patent application as a guide for searching and analyzing the reference in the right way to arrive at the claims at issue. In this context, the Office has selectively picked compounds and phrases from Rogier et al. and combined them in the right way to arrive at the claimed invention. Such hindsight reconstruction is clearly contrary to the law.[1] The Office has simply not set-forth any sufficient art-based rationale as to why a person of skill in the art would have been motivated to modify the disclosure of Rogier et al. and react an acid with a base listed in paragraph [0627] and use the resultant salt as the solvent in an enzyme catalyzed reaction. The mere identification in the prior art individual elements or features of the method does not show that the combination as a whole is obvious.[2] Rather, to establish a *prima facie* case of obviousness based on a combination of elements in the prior art, the law requires a motivation to select the critical elements and combine them in the particular claimed manner to reach the claimed invention.[3] Without this demonstration of the requisite motivation to make the Office's proposed modification, a *prima facie* case of obviousness has not been established.

In light of the above, it is submitted that the method recited in claims 57 and 58 is not rendered obvious by Rogier et al. Claims 62-67 and claims 68-70, which depend from and incorporate the limitations of claims 57 and 58, respectively, likewise are not

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[1] See *Orthopedic Equipment Co. v. United States*, 217 U.S.P.Q 193 (Fed. Cir. 1983).
[2] See *In re Dow Chemical*, 5 U.S.P.Q.2d 1529 (Fed. Cir. 1988).
[3] *In re Kahn*, 441 F.3d 977, 986 (Fed. Cir. 2006) (citing *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

obvious in view of Rogier et al. for the same reasons stated above with respect to claims 57 and 58. For the forgoing reactions, the Applicant respectfully requests withdrawal of the § 103 rejections of claims 57, 59, 62-70 in view of Rogier et al.

III. Conclusions

In light of the above, the Applicant requests entry of the claim amendments, withdrawal of the claim rejections, and solicits an allowance of all pending claims. The Examiner is invited to contact the undersigned practitioner should any issues remain unresolved.

Respectfully submitted,

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